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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Kathleen Clarke
Executive Director

Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210

PO Box 145801

Salt Lake City, Utah 84114-5801

801-538-5340

801-359-3940 (Fax)

801-538-7223 (TDD)

July 16, 2001

Rick Olsen, General Manager
Canyon Fuel Company, LLC.
P.O. Box 1029
Wellington, Utah 84542

Re: Approval of Sediment Storage, Canyon Fuel Company, LLC, Banning Loadout, ~~CAN01D~~
AM01D, Outstanding File

Dear Mr. Olsen:

The above-referenced amendment is hereby-approved effective July 16, 2001. Enclosed are a stamped incorporated copy for insertion into your Mining and Reclamation Plan (MRP) and a copy of our Technical Analysis for your information.

Please remember your commitment to submit as-built drawing within 60 days of sediment material placement. This should include laboratory analysis of a second composite sample of the material and revised MRP pages to indicate that the sediment from the Dugout Mine pond will be utilized as a top-dressing over the sodic soils found in the vicinity of TP-2 and TP-3.

If you have any questions, please call me at (801) 538-5325 or Steve Demczak at (435) 613-5242.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

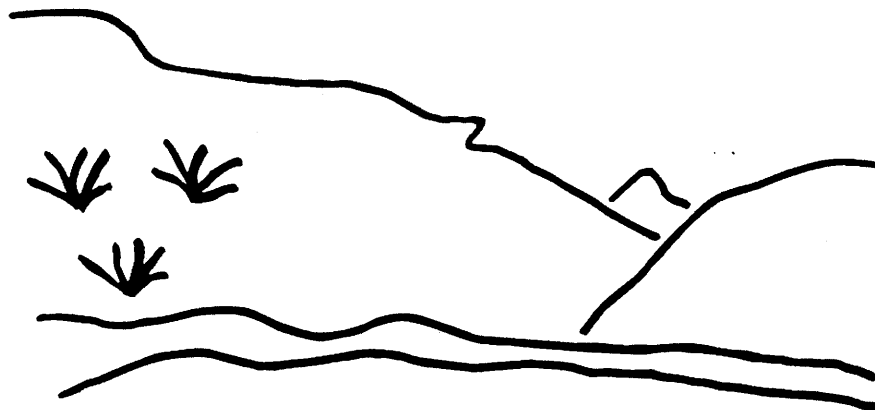
sd/sm

Enclosures:

cc: Joe Wilcox, OSM
Richard Manus, BLM
Mark Page, Water Rights w/o
Dave Ariotti, DEQ w/o
Derris Jones, DWRw/o
Price Field Office

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State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Banning Loadout
Sediment Storage
C/007/034-AM01D
Technical Analysis
July 11, 2001

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INTRODUCTION

TECHNICAL ANALYSIS

INTRODUCTION

The permittee is requesting to store sediment pond cleanout material at the Banning Loadout. The material will not exceed 1000 cubic yards. The material will come from the Dugout mine's sediment pond. Currently, the Dugout mine has no storage space where this material could be stored on site. This sediment pond cleanout material may also be approved as a growth media for reclamation of the Banning Loadout. This will depend upon the findings the Division makes. The permittee has taken one sample of the sediment pond material, and was analyzed by Inter-Mountain Laboratories. An additional composite sample of the sediment will be obtained and analyzed to accordance with the Division's guidelines. The sediment pond cleanout material is planned to be stored in the alternate sediment control area #2. In the future, the permittee will not bring any additional sediment pond material to the loadout.

This amendment to the Banning MRP provides for the storage at Banning Loadout of approximately one thousand cubic yards of sediments cleaned from the Dugout Canyon Mine sediment pond. The sediments may be utilized for substitute topsoil at the Banning Loadout, pending the outcome of the laboratory analysis of the second composite sample of the sediments (to be taken after placement at the loadout).

An approval letter should specify that as-built information to be supplied within 60 days of transport should include:

- Laboratory analysis of a second composite sample of the material and revised MRP pages to indicate that the sediment from the Dugout Mine pond will be utilized as a top-dressing over the sodic soils found in the vicinity of TP-2 and TP-3.
- Maps showing the substitute topsoil pile construction.
- Updates to the MRP page 2-9 Section R645-301-234 Topsoil Storage to describe the designation of the sediments as substitute topsoil, their location, and protection.
- Updates to the substitute topsoil and reclamation information sections of the MRP in Chapters 2 and 3 to describe the use of these sediments as topdressing over the Slickspot locations within the loadout.

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INTRODUCTION

SUMMARY OF PERMIT CONDITIONS

SUMMARY OF PERMIT CONDITIONS

As-built information is to be supplied within 60 days of placement should include laboratory analysis of a second composite sample of the material and revised MRP pages to indicate that the sediment from the Dugout Mine pond will be utilized as a top-dressing over the sodic soils found in the vicinity of TP-2 and TP-3.

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SUMMARY OF PERMIT CONDITIONS

ENVIRONMENTAL RESOURCE INFORMATION

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Minimum Regulatory Requirements:

Provide adequate soil survey information on those portions of the permit area to be affected by surface operations or facilities consisting of a map delineating different soils, soil identification, soil description, and present and potential productivity of existing soils.

Where selected overburden materials are proposed as a supplement or substitute for topsoil, provide results of the analysis, trials and tests required. Results of physical and chemical analyses of overburden and topsoil must be provided to demonstrate that the resulting soil medium is equal to or more suitable for sustaining revegetation than the available topsoil, provided that trials and tests are certified by an approved laboratory. These data may be obtained from any one or a combination of the following sources: U.S. Department of Agriculture Soil Conservation Service published data based on established soil series; U.S. Department of Agriculture Soil Conservation Service Technical Guides; State agricultural agency, university, Tennessee Valley Authority, Bureau of Land Management or U.S. Department of Agriculture Forest Service published data based on soil series properties and behavior; or, results of physical and chemical analyses, field site trials, or greenhouse tests of the topsoil and overburden materials (soil series) from the permit area. If the permittee demonstrates through soil survey or other data that the topsoil and unconsolidated material are insufficient and substitute materials will be used, only the substitute materials must be analyzed.

Analysis:

At Banning Loadout, the precipitation is seven to nine inches annually. The climate regime is aridic or torric.

Soil resource information for the Banning Loadout is provided in Chapter 2, Volume 1 of the MRP. The native soil is the Ravola series. The site was disturbed pre-law and no topsoil was salvaged. Appendix 2-3 provides an SCS Map Unit description of the Ravola-Slickspot Complex. An excerpt is rewritten below:

The Ravola soil is very deep and well drained. It formed in alluvium derived dominantly from sandstone and shale. The present vegetation in most areas is mainly greasewood, alkali sacaton, pricklypear, Russian thistle, galleta, and Indian ricegrass. Typically, the surface layer is light brownish gray loam about 8 inches thick. The underlying layer to a depth of 60 inches or more is light brownish gray loam. This soil is strongly alkaline below a depth of 20 inches.

Slickspots are barren or nearly barren areas. They have a very strongly alkaline, nearly impervious surface layer of loam about 4 inches thick. The underlying layer is light grayish brown loam and silt loam. This layer is strongly saline and is moderately alkali or strongly alkali.

Test pits and laboratory analysis are found in Appendix 2-2. Three soil pits were dug to a depth of 54 inches. Sample locations are shown on Exhibit 3-1. Test Pit 1 in the vicinity of the equipment storage area seems to represent the native Ravola soils. The pH of the soil in TP-1 ranges from 8.3 to 8.5; the Electrical Conductivity of TP-1 is 0.8 to 0.9 mmhos/cm; the SAR of TP-1 is 1.4 in the surface six inches and from 3.1 to 3.7 from six to 54 inches. The soil texture was reported as a loam.

Test Pits 2 and 3 were dug in soils below the coal storage area and conveyor and seem to represent the native Slickspots. These soils were very high in pH (from 9.0 to 9.8) and have very high SAR values (from 37 to 78). The soil was sampled down to a depth of 54 inches. Sample locations are shown on Exhibit 3-1. The texture of these in-place sodic soils was described as silt loam (predominantly).

In contrast, the sediments being brought to the Banning Loadout site for storage and possible use as substitute topsoil have a pH of 7.4 and an SAR of 2.34. This material has a texture of clay loam. The total organic carbon content of the sediments is approximately 10%.

The SCS concludes their discussion of the Ravola soil in Appendix 2-3 with the statement, "It is not practical to revegetate large areas of the Ravola soil because of the low annual precipitation and the content of alkali in the soil."

Reclamation test plots at Banning Loadout were started in November 1991 and were monitored through 1998 to evaluate the use of organic matter to alleviate extremely harsh soil conditions (Appendix 3-4). One of the conclusions from test plot monitoring was that the most successful treatment was to rip and gouge the surface then seed and mulch. None of the other treatments, such as applying manure, sawdust, or fertilizer, appeared to increase the amount of vegetation. The control areas that were simply gouged and mulched with no seed applied had little or no vegetation. The test plots showed vegetation could be established. However, in final reclamation, greater diversity than was found in the test plots will be required.

In about 1993, an area near the substation was gouged, seeded with Gardner saltbush (probably *Atriplex gardneri* Var. *tridentata*) and crested wheatgrass (*Agropyron desertorum*), and mulched. This revegetation effort was successful. However, stunted plants may have been due to the Slickspot soils underlying the substation location.

Using these sediments to cover the sodic Slickspot soils represented by TP-2 and TP-3 on Exhibit 3-1 and described in Appendix 2-2 would enhance the reclamation of the Banning

Loadout site. The use of these sediments may also aide in developing a more diverse plant population.

The Division supports the transport of Dugout Mine pond sediments to Banning Loadout, pending the outcome of the laboratory analysis of the second composite sample of the sediments (to be taken after placement at the loadout, see page 2-9a). The MRP should be updated to indicate on pages 2-5 and 2-11 that 1,000 cu yards of sediment from the Dugout Mine pond will be utilized as a topdressing over the sodic soils found in the vicinity of TP-2 and TP-3. Additionally, the MRP should be modified on pages 2-5 and 2-11 where the need for substitute topsoil is discussed.

The MRP states that when topsoil substitutes are proposed, they will be sampled and analyzed to demonstrate that the substitute topsoil is equal to or more suitable than the available topsoil (page 2-9). This amendment has followed through with this commitment. Further, the MRP indicates that there is no need for substitute topsoil, but that should the need arise, a request for permit amendment to that effect will be submitted (page 2-5). A similar statement is repeated at the bottom of page 2-11 and top of 2-12.

Findings:

Information provided in the proposed amendment meets the minimum Soil Resource requirements of the Regulations. As-built information to be supplied within 60 days of placement should include laboratory analysis of a second composite sample of the material and revised MRP pages to indicate that the sediment from the Dugout Mine pond will be utilized as a topdressing over the sodic soils found in the vicinity of TP-2 and TP-3.

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ENVIRONMENTAL RESOURCE INFORMATION

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TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Minimum Regulatory Requirements:

Topsoil removal and storage

All topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. Where the topsoil is of insufficient quantity or of poor quality for sustaining vegetation, the selected overburden materials approved by the Division for use as a substitute or supplement to topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. If topsoil is less than 6 inches thick, the operator may remove the topsoil and the unconsolidated materials immediately below the topsoil and treat the mixture as topsoil.

The Division may choose not to require the removal of topsoil for minor disturbances that occur at the site of small structures, such as power poles, signs, or fence lines; or, will not destroy the existing vegetation and will not cause erosion.

All materials shall be removed after the vegetative cover that would interfere with its salvage is cleared from the area to be disturbed, but before any drilling, blasting, mining, or other surface disturbance takes place.

Selected overburden materials may be substituted for, or used as a supplement to, topsoil if the operator demonstrates to the Division that the resulting soil medium is equal to, or more suitable for sustaining vegetation than, the existing topsoil, and the resulting soil medium is the best available in the permit area to support revegetation.

Materials removed shall be segregated and stockpiled when it is impractical to redistribute such materials promptly on regraded areas. Stockpiled materials shall: be selectively placed on a stable site within the permit area; be protected from contaminants and unnecessary compaction that would interfere with revegetation; be protected from wind and water erosion through prompt establishment and maintenance of an effective, quick growing vegetative cover or through other measures approved by the Division; and, not be moved until required for redistribution unless approved by the Division.

Where long-term surface disturbances will result from facilities such as support facilities and preparation plants and where stockpiling of materials would be detrimental to the quality or quantity of those materials, the Division may approve the temporary distribution of the soil materials so removed to an approved site within the permit area to enhance the current use of that site until needed for later reclamation, provided that: such action will not permanently diminish the capability of the topsoil of the host site; and, the material will be retained in a condition more suitable for redistribution than if stockpiled.

The Division may require that the B horizon, C horizon, or other underlying strata, or portions thereof, be removed and segregated, stockpiled, and redistributed as subsoil in accordance with the above requirements if it finds that such subsoil layers are necessary to comply with the revegetation.

Analysis:

Removal and Storage

Exhibit 3-1 of the MRP shows the soil resources for the Banning Loadout. No stockpiled soil is identified on the map. The sediments to be brought to the site from the Dugout Mine will be stored in the equipment storage area and/or within the disturbed area of ASCA Area #2 (Exhibit 5-2). As-built maps showing the substitute topsoil pile construction will be provided within 60 days of transport to the site. The MRP page 2-9 Section R645-301-234 Topsoil Storage should also be updated at that time to describe the designation of the sediments as substitute topsoil, their location, and protection.

The sediments transported from Dugout Mine pond to Banning will be stored in a pile no greater than two feet thick. The sediments will be gouged and seeded with the reclamation mix presented in Table 3-3 of the MRP.

Findings:

The information provided in the submittal does not meet the minimum operational topsoil and subsoil removal and storage requirements and must be updated pending the outcome of the second laboratory analysis of the composite sample to be taken of the material after transport to the site.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Minimum Requirements:

Sediment Control Measures

Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to: prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area; meet the more stringent of applicable State or Federal effluent limitations; and, minimize erosion to the extent possible.

Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to: disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation; stabilizing the backfilled material to promote a reduction of the rate and volume of runoff; retaining sediment within disturbed areas; diverting runoff away from disturbed areas; diverting runoff using protected

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channels or pipes through disturbed areas so as not to cause additional erosion; using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; treating with chemicals; and, treating mine drainage in underground sumps.

Analysis:

Sediment control measures

The permittee will be using ASCA #2 at Banning Loadout to store Dugout Mine's sediment pond cleanout material. At this time, ASCA #2 treats runoff from the railroad tracks and vegetative test plot. Silt fences are the main treatment of ASCA #2. The test plot will be removed, if necessary, to store the sediment material. The test plot is no longer needed. An amendment has been approved requiring no further studies of this area.

The placement of sediment will not affect the quality of water runoff from this ASCA. The sediment material will be completely bermed. This will keep all sediment within the designated sediment cleanout area. Silt fences are currently located by the railroad tracks for treatment of ASCA #2. The sediment runoff of this area could actually be reduced, since a large portion of this area will now be protected by a berm, thus, having two water treatments instead of one.

Findings:

The permittee has met the requirements of this section of the R645 Coal Rules.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Minimum Requirements:

Mining facilities maps

Location of each facility used in conjunction with mining operations. Such structures and facilities shall include, but not be limited to: buildings, utility corridors, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, spoil, coal preparation waste, underground development waste, and noncoal waste storage area; each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility relating to coal processing or pollution control; each facility to be used to protect and enhance fish and wildlife related environmental values; each explosives storage and handling facility; location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, and disposal areas for underground development waste and excess spoil; and, each plan or profile, at cross sections specified by the Division, of the anticipated surface configuration to be achieved for the affected areas during mining operations.

Analysis:

Mining facilities maps

The permittee will submit an updated surface facilities map as an as-built drawing. This map will include the storage location of the sediment pond cleanout (substitute topsoil) from the Dugout Mine. This map will be submitted within sixty days upon completion of the project.

Findings:

The permittee has complied with this section of the R645 Coal Rules.

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APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Minimum Regulatory Requirements:

Note: The following requirements have been suspended insofar as they authorize any variance from approximate original contour for surface coal mining operations in any area that is not a steep slope area.

Criteria for permits incorporating variances from approximate original contour restoration requirements.

The Division may issue a permit for non-mountaintop removal mining that includes a variance from the backfilling and grading requirements to restore the disturbed areas to their approximate original contour. The permit may contain such a variance only if the Division finds, in writing, that the applicant has demonstrated, on the basis of a complete application, that the following requirements are met:

- 1.) After reclamation, the lands to be affected by the variance within the permit area will be suitable for an industrial, commercial, residential, or public post-mining land use (including recreational facilities).
- 2.) The criteria for the proposed post mining land use will be met.
- 3.) The watershed of lands within the proposed permit and adjacent areas will be improved by the operations when compared with the condition of the watershed before mining or with its condition if the approximate original contour were to be restored. The watershed will be deemed improved only if: the amount of total suspended solids or other pollutants discharged to ground or surface water from the permit area will be reduced, so as to improve the public or private uses or the ecology of such water, or flood hazards within the watershed containing the permit area will be reduced by reduction of the peak flow discharge from precipitation events or thaws; the total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that adversely affects the ecology of any surface water or any existing or planned use of surface or ground water; and, the appropriate State environmental agency approves the plan.
- 4.) The owner of the surface of the lands within the permit area has knowingly requested, in writing, as part of the application, that a variance be granted. The request shall be made separately from any surface owner consent given for right-of-entry and shall show an understanding that the variance could not be granted without the surface owner's request.

If a variance is granted, the requirements of the post mining land use criteria shall be included as a specific condition of the permit, and, the permit shall be specifically marked as containing a variance from approximate original contour.

A permit incorporating a variance shall be reviewed by the Division at least every 30 months following the issuance of the permit to evaluate the progress and development of the surface coal mining and reclamation operations to establish that the operator is proceeding in accordance with the terms of the variance. If the permittee demonstrates to the Division that the operations have been, and continue to be, conducted in compliance with the terms and conditions of the permit, the review specified need not be held. The terms and conditions of a permit

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incorporating a variance may be modified at any time by the Division, if it determines that more stringent measures are necessary to ensure that the operations involved are conducted in compliance with the requirements of the regulatory program. The Division may grant variances only if it has promulgated specific rules to govern the granting of variances in accordance with the provisions of this section and any necessary, more stringent requirements

Analysis:

If the material is used as substitute topsoil, it will add only a maximum of 1,000 cubic yards of material to the reclamation of the entire site. This will have no change to the Approximate Original Contour requirements.

Findings:

The permittee has met the requirements of this section of the R645 Coal Rules.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Minimum Regulatory Requirements:

General

Disturbed areas shall be backfilled and graded to: achieve the approximate original contour; eliminate all highwalls, spoil piles, and depressions; achieve a post-mining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long term static safety factor of 1.3 and to prevent slides; minimize erosion and water pollution both on and off the site; and, support the approved post-mining land use.

The post-mining slope may vary from the approximate original contour when approval is obtained from the Division for a variance from approximate original contour requirements, or when incomplete elimination of highwalls in previously mined areas is allowed under the regulatory requirements. Small depressions may be constructed if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation.

If it is determined by the Division that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health and safety of the public, the Division may allow the existing spoil or underground development waste pile to remain in place. Accordingly, regrading of settled and revegetated fills to achieve approximate original contour at the conclusion of underground mining activities shall not be required if: the settled and revegetated fills are composed of spoil or nonacid- or nontoxic-forming underground development waste; the spoil or underground development waste is not located so as to be detrimental to the environment, to the health and safety of the public, or to the approved post-mining land use; stability of the spoil or underground development waste must be demonstrated through standard geotechnical analysis to be consistent with backfilling and grading requirements for material on the solid bench (1.3 static safety factor) or excess spoil requirements for material not placed on a solid bench (1.5 static safety factor); and, the surface of the spoil or underground development waste shall be vegetated in accordance with the revegetation standards for success, and

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surface runoff shall be controlled in accordance with the regulatory requirements for diversions.

Spoil shall be returned to the mined-out surface area. Spoil and waste materials shall be compacted where advisable to ensure stability or to prevent leaching of toxic materials. Spoil may be placed on the area outside the mined-out surface area in non-steep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain if the following requirements are met: all vegetative and organic materials shall be removed from the area; the topsoil on the area shall be removed, segregated, stored, and redistributed in accordance with regulatory requirements; the spoil shall be backfilled and graded on the area in accordance with the general requirements for backfilling and grading.

Analysis:

General

The permittee has plans to use the sediment pond cleanout material as substitute topsoil, if approved by the Division. The maximum amount of sediment pond material (substitute topsoil) will be 1,000 cubic yards. This material would be used to cover the coal yard. This is not enough material to affect backfilling and grading.

Findings:

The permittee has met the requirements of this section of the R645 Coal Rules.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Minimum Regulatory Requirements:

Redistribution

Topsoil materials shall be redistributed in a manner that: achieves an approximately uniform, stable thickness consistent with the approved post-mining land use, contours, and surface-water drainage systems; prevents excess compaction of the materials; and, protects the materials from wind and water erosion before and after seeding and planting.

Before redistribution of the material, the regraded land shall be treated if necessary to reduce potential slippage of the redistribution material and to promote root penetration. If no harm will be caused to the redistributed material and reestablished vegetation, such treatment may be conducted after such material is replaced.

The Division may choose not to require the redistribution of topsoil or topsoil substitutes on the approved post-mining embankments of permanent impoundments or of roads if it determines that placement of topsoil or topsoil substitutes on such embankments is inconsistent with the requirement to use the best technology currently available to prevent sedimentation, and, such embankments will be otherwise stabilized.

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Nutrients and soil amendments shall be applied to the initially redistributed material when necessary to establish the vegetative cover.

The Division may require that the B horizon, C horizon, or other underlying strata, or portions thereof, removed and segregated, stockpiled, be redistributed as subsoil in accordance with the requirements of the above if it finds that such subsoil layers are necessary to comply with the revegetation requirements.

Analysis:

The Banning Loadout has disturbed approximately 20 acres (Exhibit 5-2). Chapter 2 (pages 2-9 through 2-15) and Chapter 3 (pages 3-8 through 3-17) describe the soil reclamation plans for the Banning Loadout. The MRP describes removing surface coal (the surface will not exceed 50% coal); ripping to a depth of 18 inches; discing the soil until the average soil clod on the surface is less than one inch in size; grading to contour; and creation of depressions for moisture retention; addition of 40 lbs/acre of sulfur coated urea (45-0-0); incorporation of 2000 lbs of alfalfa or native grass hay; broadcast or drill seeding according to Table 3-3; and application of 2000 pounds/acre wood fiber mulch with chemical tacifier.

Slickspots identified by TP-2 and TP-3 would benefit by a surface layer of sediment cleaned from the Dugout Mine pond. If 1,000 cubic yards are brought to the site, approximately 1.2 acres could be topdressed to a depth of six inches (see calculation below). This topdressing would serve to allow seedlings to become established before encountering the alkaline conditions of the Slickspot soils.

$$\begin{aligned} 1,000 \text{ cu yds} &= 27,000 \text{ cu ft.} \\ 27,000 \text{ cu ft} \div X &= 0.5 \text{ ft cover.} \\ X &= 27,000 \text{ cu ft} \div 0.5 \text{ ft} = 54,000 \text{ sq ft.} \\ 54,000 \text{ sq ft} \div 43,560 \text{ sq ft/ac} &= 1.2 \text{ acres} \end{aligned}$$

Pending the outcome of the second laboratory analysis of the composite sample of sediments, as built information must update the substitute topsoil and reclamation information sections of the MRP in Chapters 2 and 3 to describe the use of these sediments as topdressing over the Slickspot locations within the loadout.

The Division does not agree with "discing the soil until the average soil clod on the surface is less than one inch in size." This practice may have biased the test plot results as alkaline soil is already impermeable to water and creating a powdery surface compounds the problem. The Division requests that when the reclamation plan is rewritten to incorporate the use of the pond sediments, the discing step is eliminated from the reclamation plan.

Findings:

Information provided in the proposed amendment meets the minimum reclamation topsoil and subsoil requirements of the Regulations. Pending the outcome of the second

RECLAMATION PLAN

laboratory analysis of the composite sample of sediments, as-built information must update the substitute topsoil and reclamation information sections of the MRP in Chapters 2 and 3 to describe the use of these sediments as topdressing over the Slickspot locations within the loadout.

sd

cc: Price Field Office

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